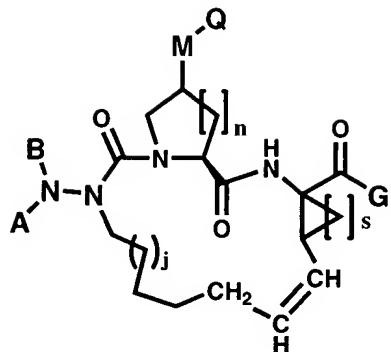


WHAT IS CLAIMED:

1. A compound of Formula I:



(I)

5

wherein

A is selected from:

- (a) hydrogen;
- (b) $-(C=O)-O-R_1$, where R_1 is selected from:

10

- 1. hydrogen,
- 2. C_1-C_6 alkyl,
- 3. C_3-C_{12} cycloalkyl,
- 4. substituted C_3-C_{12} cycloalkyl,
- 5. aryl,
- 6. substituted aryl,
- 7. heteroaryl,
- 8. substituted heteroaryl,
- 9. heterocycloalkyl,
- 10. substituted heterocycloalkyl, or

15

- 11. $-C_1-C_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

20

- (c) $-(C=O)-R_2$, where R_2 is selected from:

1. $-R_1$, where R_1 is as previously defined,
2. alkylamino,
3. dialkyl amino,
4. arylamino, or
5. diarylamino;

5 (d) $-C(=O)-NH-R_2$, where R_2 is as previously defined;
(e) $-C(=S)-NH-R_2$, where R_2 is as previously defined;
(f) $-S(O)_2-R_2$, where R_2 is as previously defined;

B is hydrogen or C_1-C_6 alkyl;

10 G is

(a) $-OH$;
(b) $-O-(C_1-C_{12}$ alkyl);
(c) $-NH-R_2$, where R_2 is as previously defined;
(d) $-NHS(O)_2-R_1$, where R_1 as previously defined;
15 (e) $-(C=O)-R_2$, where R_2 as previously defined;
(f) $-(C=O)-O-R_1$, where R_1 as previously defined; or
(g) $-(C=O)-NH-R_2$, where R_2 as previously defined;

M is absent or selected from:

(a) $-O-$;
20 (b) $-S-$;
(c) $-NH-$; or
(d) $-NR_1-$, wherein R_1 is previously defined;

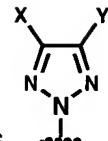
Q is selected from:

(a) aryl;
25 (b) substituted aryl;
(c) heteroaryl;
(d) substituted heteroaryl;
(e) heterocycloalkyl; or
(f) substituted heterocycloalkyl;

30 $j = 0, 1, 2, 3$, or 4;

$n = 0, 1, \text{ or } 2$; and

$s = 0, 1, \text{ or } 2$.



2. A compound of formula I, wherein M is absent and Q is ,
wherein X and Y are each independently selected from:

5 a) $-\text{C}_1\text{--C}_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

10 b) $-\text{C}_2\text{--C}_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

15 c) $-\text{C}_2\text{--C}_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

20 d) aryl;

 e) substituted aryl;

 f) heteroaryl;

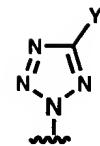
 g) substituted heteroaryl;

 h) heterocycloalkyl; or

 i) substituted heterocycloalkyl;

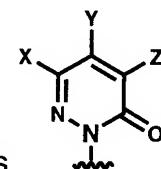
or in the alternative, X and Y are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl,

25 heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;



3. A compound of formula I, wherein M is absent and Q is
wherein Y is selected from:

- a) $-C_1-C_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;
- b) $-C_2-C_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;
- c) $-C_2-C_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;
- d) aryl;
- e) substituted aryl;
- f) heteroaryl;
- g) substituted heteroaryl;
- h) heterocycloalkyl; or
- i) substituted heterocycloalkyl;



4. A compound of formula I, wherein M is absent and Q is

wherein X, Y, and Z are each independently selected from:

- a) $-C_1-C_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

b) $-\text{C}_2\text{--C}_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

5 c) $-\text{C}_2\text{--C}_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

d) aryl;

10 e) substituted aryl;

f) heteroaryl;

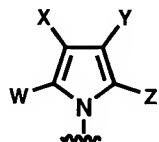
g) substituted heteroaryl;

h) heterocycloalkyl; or

i) substituted heterocycloalkyl;

15 or in the alternative, X and Y or Y and Z are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

20 5. A compound of formula I, wherein M is absent and Q is



wherein W, X, Y, and Z are each independently selected from:

a) $-\text{C}_1\text{--C}_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

25 b) $-\text{C}_2\text{--C}_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

c) $-\text{C}_2\text{--C}_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

5 d) aryl;

e) substituted aryl;

f) heteroaryl;

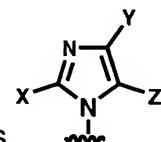
g) substituted heteroaryl;

h) heterocycloalkyl; or

10 i) substituted heterocycloalkyl;

or in the alternative, W and X, X and Y, or Y and Z are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

15



6. A compound of formula I, wherein M is absent and Q is

wherein X, Y, and Z are each independently selected from:

a) $-\text{C}_1\text{--C}_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

20 b) $-\text{C}_2\text{--C}_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl,

25 heterocycloalkyl, or substituted heterocycloalkyl;

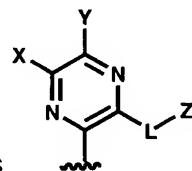
c) $-\text{C}_2\text{--C}_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl,

heterocycloalkyl, or substituted heterocycloalkyl;

5 d) aryl;
 e) substituted aryl;
 f) heteroaryl;
 g) substituted heteroaryl;
 h) heterocycloalkyl; or
 i) substituted heterocycloalkyl;

or in the alternative, Y and Z are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

10



7. A compound of formula I, wherein M is $-O-$ and Q is
 wherein

L is M, where M is as previously defined;

15 X, Y, and Z are each independently selected from:

a) $-C_1-C_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

b) $-C_2-C_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

c) $-C_2-C_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

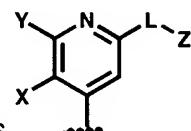
20 d) aryl;

25

- e) substituted aryl;
- f) heteroaryl;
- g) substituted heteroaryl;
- h) heterocycloalkyl; or
- i) substituted heterocycloalkyl;

or in the alternative, X and Y are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

10



8. A compound of formula I, wherein M is $-O-$ and Q is

wherein

L is M, where M is as previously defined;

X, Y, and Z are each independently selected from:

15

a) $-\text{C}_1\text{--C}_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

b) $-\text{C}_2\text{--C}_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

c) $-\text{C}_2\text{--C}_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl:

25

- d) aryl;
- e) substituted aryl;
- f) heteroaryl;

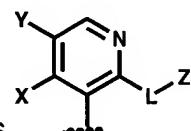
g) substituted heteroaryl;

h) heterocycloalkyl; or

i) substituted heterocycloalkyl;

or in the alternative, X and Y are taken together with the carbons to which they

5 are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl; or



9. A compound of formula I, wherein M is $-O-$ and Q is

10 wherein

L is M, where M is as previously defined;

X, Y, and Z are each independently selected from:

a) $-C_1-C_6$ alkyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

b) $-C_2-C_6$ alkenyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

c) $-C_2-C_6$ alkynyl containing 0, 1, 2, or 3 heteroatoms selected from O, S, or N, optionally substituted with one or more substituent selected from halogen, aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl;

20

d) aryl;

e) substituted aryl;

f) heteroaryl;

g) substituted heteroaryl;

h) heterocycloalkyl; or

i) substituted heterocycloalkyl;

or in the alternative, X and Y are taken together with the carbons to which they are attached to for a cyclic moiety selected from: aryl, substituted aryl, heteroaryl, substituted heteroaryl, heterocycloalkyl, or substituted heterocycloalkyl.

5

10. A compound according to claim 1 represented by formula I selected from:

Compound of formula I, wherein A = Boc, B = hydrogen, G = OEt, M = -O-, Q = hydrogen, and j = n = s = 1;

10

Compound of formula I, wherein A = Boc, B = hydrogen, G = OEt, M = -O-, Q = -S(O)₂CH₃, and j = n = s = 1;

15

Compound of formula I, wherein A = Boc, B = hydrogen, G = OEt, M = -O-, Q = 2-thiophenyl-quinolin-4-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 2-thiophenyl-quinolin-4-yl, and j = n = s = 1;

20

Compound of formula I, wherein A = Boc, B = hydrogen, G = OEt, M is absent, Q = 4,5-diphenyltriazol-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 4,5-di-thiophenyltriazol-2-yl, and j = n = s = 1;

25

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 4-(thiophen-3-yl)-5-(p-methoxyphenyl)triazol-2-yl, and j = n = s = 1;

30

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 4-(n-butyl)-5-phenyltriazol-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 5-(3-methoxyphenyl)tetrazol-2-yl, and j = n = s = 1;

5 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 5-(4-pyridyl)tetrazol-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 5-(3,4-dichlorophenyl)tetrazol-2-yl, and j = n = s = 1;

10 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 5-(3-bromo-4-methoxy-phenyl)tetrazol-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 4-(4-fluoro-phenyl)-6-phenyl-1H-pyridazin-3-on-2-yl, and j = n = s = 1;

15 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M is absent, Q = 6-phenyl-5-piperidin-1-yl-1H-pyridazin-3-on-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-2-phenyl-quinolin-4-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-2-thiazolyl-quinolin-4-yl, and j = n = s = 1;

25 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-2-thiophenyl-quinolin-4-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-3-(thiophen-2-yl)-1H-quinoxalin-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 6-Methoxy-3-(thiophen-2-yl)-1H-quinoxalin-2-yl, and j = n = s = 1;

5 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-3-[2-(thiophen-2-yl)vinyl]-1H-quinoxalin-2-yl, and j = n = s = 1;

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 6-Methoxy-3-[2-(thiophen-2-yl)vinyl]-1H-quinoxalin-2-yl, and j = n = s = 1;

10 Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-Methoxy-3-[2-(pyridin-2-yl)vinyl]-1H-quinoxalin-2-yl, and j = n = s = 1; or

Compound of formula I, wherein A = Boc, B = hydrogen, G = OH, M = -O-, Q = 7-methoxy-3-[2-(pyridin-2-yl)vinyl]-1H-quinoxalin-2-yl, and j = n = s = 1.

15 11. A pharmaceutical composition comprising an anti-hepatitis C virally effective amount of a compound according to claim 1, or a pharmaceutically acceptable salt, ester, or prodrug thereof, in combination with a pharmaceutically acceptable carrier or excipient.

20 12. A method of treating a hepatitis C viral infection in a mammal, comprising administering to the mammal an anti-hepatitis C virally effective amount of a pharmaceutical composition according to claim 11.

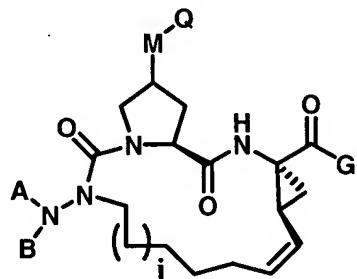
25 13. A method of inhibiting the replication of hepatitis C virus, the method comprising supplying a hepatitis C viral NS3 protease inhibitory amount of the pharmaceutical composition of claim 11.

30 14. The method of claim 13 further comprising administering concurrently an additional anti-hepatitis C virus agent.

15. The method of claim 14, wherein said additional anti-hepatitis C virus agent is selected from the group consisting of: α -interferon, β -interferon, ribavarin, and adamantane.

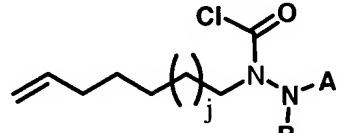
5 16. The method of claim 14, wherein said additional anti-hepatitis C virus agent is an inhibitor of another target in the hepatitis C virus life cycle, which is selected from the group consisting of: helicase, polymerase, metalloprotease, and IRES.

17. A process of making compounds of formula I:



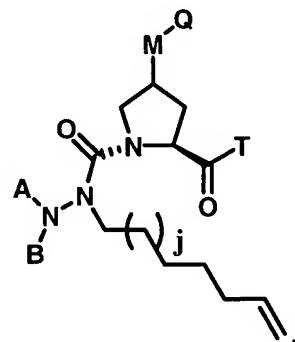
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wherein A, B, G, M, Q, j, n, and s are as defined in claim 1, comprising the steps of:



(a) reacting a compound of formula (A):

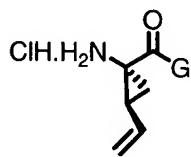
and j is as defined in claim 1 with a hydroxyproline ethyl ester derivative of formula (B): in the presence of a base to form a compound of formula (C):



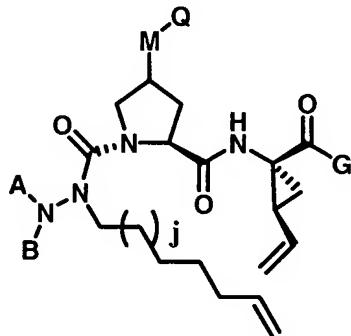
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wherein A, B, and j are as defined in claim 1 and T is selected from OH, OMe, or OEt;

(b) reacting a compound of formula B with a compound of formula (**D**):



, wherein G is as defined in claim 1, under standard amide formation conditions to form a compound of formula (**E**):



, wherein A, B, G, M, Q, and j are as defined in claim

5

1; and

(c) reacting compound of formula E with a Ruthenium-based catalyst.